What is claimed is:

1. An elongated multi-layer tubing for connection to a motor vehicle system to handle fluids containing hydrocarbons comprising:

a first layer disposed radially innermost and having an inner surface capable of prolonged exposure to a fluid containing hydrocarbons and an outer surface spaced a first predetermined radial thickness from the inner surface, the first layer consisting essentially of an extrudable, melt-processible thermoplastic;

a second layer having a second predetermined radial thickness at most equal to the thickness of the first layer, the second layer uniformly connected to the first layer and consisting essentially of an extrudable, melt-processible thermoplastic capable of sufficiently permanent laminar adhesion with the first layer to prevent delamination during a desired lifetime of said tubing, at least one of the first and second layers resistant to permeation by hydrocarbons;

a third layer having a third predetermined radial thickness greater than the thickness of the first layer, the third layer uniformly connected to the second layer and consisting essentially of an extrudable, melt-processible thermoplastic capable of sufficiently permanent laminar adhesion to the second layer to prevent delamination during said desired lifetime of said tubing; and

wherein at least one layer of said tubing is capable of dissipating electrostatic energy in a range between about 10^{-4} to 10^{-9} Ohm/cm^2.

2. The tubing of claim 1 further comprising:

the tubing having a passive hydrocarbon permeation rate less than about 0.5 g/m^2 in a 24 hour interval.

3. The tubing of claim 1 further comprising:

the tubing having a tensile strength of at least 25 N/mm^2 and a burst strength at 23°C and 120°C of at least 20 bar.

4. The tubing of claim 1 further comprising:

the tubing having an elongation at break of at least 150%.

5. The tubing of claim 1 further comprising:

the tubing having an ability to resist impacts of at least 2 foot-pounds at temperatures below about -20°C.

6. The tubing of claim 1 wherein said at least one layer contains quantities of a conductive material sufficient to provide electrostatic dissipation capability in a range between about 10^{-4} to 10^{-9} Ohm/cm^2.

7. The tubing of claim 6 wherein the conductive material is selected from the group consisting of elemental carbon, copper, silver, gold, nickel, silicon, and mixtures thereof.

8. The tubing of claim 6 wherein the conductive material is present in an amount less than about 5% by volume of said at least one layer.

9. The tubing of claim 6 wherein the conductive material is blended into said at least one layer.

10. The tubing of claim 6 wherein the conductive material is elemental carbon and is incorporated during polymerization of monomers that make up said at least one layer.

11. The tubing of claim 1 wherein the first layer further comprises:

an extrudable, melt-processible thermoplastic selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, thermoplastic elastomers, and mixtures thereof.

12. The tubing of claim 1 wherein the first layer further comprises:

an extrudable, melt-processible thermoplastic containing as a major constituent a fluoroplastic selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, polychlorotrifluoroethylene, ethylene tetrafluoroethylene copolymers, a graft copolymer with a fluorine-containing polymer such as copolymers of vinylidine fluoride and chlorotrifluoroethane, a copolymer of a vinyl fluoride and chlorotrifluoroethylene, the vinyl fluoride material selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, and mixtures thereof; a copolymer of vinyl fluoride material and ethylene tetrafluoroethylene; and a non-fluorinated elastomer, and mixtures thereof.

13. The tubing of claim 1 wherein the second layer further comprises:

an extrudable, melt-processible, polyester thermoplastic selected from the group consisting of polybutylene terephthalate, polyethylene terephthalate, polyteremethylene terephthalate, and mixtures thereof.

14. The tubing of claim 1 wherein the second layer includes as a major constituent an extrudable, melt-processible thermoplastic selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, blends of polyvinyl acetate and urethane, a polyvinyl fluoride compound selected from the group consisting of polyvinylidine fluoride polymers, polyvinyl fluoride polymers, and mixtures thereof; a vinylidine fluoride-chlorotrifluoroethylene copolymer; and a polyamide material selected from the group consisting of 12 carbon block polyamides, 11 carbon block polyamides, 6 carbon block polyamides, and mixtures thereof.

15. The tubing of claim 1 wherein said second layer includes as a major constituent an extrudable, melt-processible thermoplastic selected from the group consisting of co-polymers of alkenes having less than four carbon atoms and

vinyl alcohol, copolymers of alkenes having less than four carbon atoms and vinyl acetate, and mixtures thereof.

16. The tubing of claim 1 wherein said third layer further comprises:

an extrudable, melt-processible thermoplastic selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, thermoplastic elastomers, and mixtures thereof.

17. The tubing of claim 1 further comprising:

a fourth layer defining a jacket overlying the third layer, the jacket composed of a material consisting essentially of a thermoplastic rubber selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, polyether block amides, thermoplastic elastomers, and mixtures thereof.

18. An elongated multi-layer tubing for connection to a motor vehicle system to handle fluids containing hydrocarbons comprising:

a first layer disposed radially innermost and having an inner surface capable of prolonged exposure to a fluid containing hydrocarbons and an outer surface spaced a first predetermined radial thickness from the inner surface, the first layer consisting essentially of an extrudable, melt-processible thermoplastic;

a second layer having a second predetermined radial thickness at most equal to the thickness of the first layer, the second layer homogeneously connected to the first layer and consisting essentially of an extrudable, melt-processible thermoplastic capable of sufficiently permanent laminar adhesion with the first layer to prevent delamination during a desired lifetime of said tubing, at least one of the first and second layers resistant to permeation by hydrocarbons;

a third layer having a third predetermined radial thickness greater than the thickness of the first layer, the third layer homogeneously connected to the second layer and consisting essentially of an extrudable, melt-processible

thermoplastic capable of sufficiently permanent laminar adhesion to the second layer to prevent delamination during said desired lifetime of said tubing; and

wherein the tubing has a passive hydrocarbon permeation rate less than about 0.5 g/m^2 in a 24 hour interval, an elongation at break of at least 150%, an ability to resist impacts of at least 2 foot-pounds at temperatures below about -20°C, a tensile strength of at least 25 N/mm^2 and a burst strength at 23°C and 120°C of at least 20 bar.

19. The tubing of claim 18 further comprising:

at least one layer of said tubing capable of dissipating electrostatic energy in a range between about 10^{-4} to 10^{-9} Ohm/cm^2.

20. The tubing of claim 19 wherein said at least one layer contains quantities of a conductive material sufficient to provide electrostatic dissipation capability in a range between about 10^{-4} to 10^{-9} Ohm/cm^2.

21. The tubing of claim 20 wherein the conductive material is selected from the group consisting of elemental carbon, copper, silver, gold, nickel, silicon, and mixtures thereof.

22. The tubing of claim 20 wherein the conductive material is present in an amount less than about 5% by volume of said at least one layer.

23. The tubing of claim 20 wherein the conductive material is blended into said at least one layer.

24. The tubing of claim 20 wherein the conductive material is elemental carbon and is incorporated during polymerization of monomers that make up said at least one layer.

25. The tubing of claim 18 wherein the first and third layers are composed of chemically similar materials including as a major constituent an extrudable, melt-processible thermoplastic selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, thermoplastic elastomers, and mixtures thereof.

26. The tubing of claim 25 wherein said second layer includes as a major constituent an extrudable, melt-processible, polyester thermoplastic selected from the group consisting of polybutylene terephthalate, polyethylene terephthalate, polyteremethylene terephthalate, and mixtures thereof.

27. The tubing of claim 25 wherein said second layer includes as a major constituent an extrudable, melt-processible thermoplastic selected from the group consisting of co-polymers of alkenes having less than four carbon atoms and vinyl alcohol, copolymers of alkenes having less than four carbon atoms and vinyl acetate, and mixtures thereof.

28. The tubing of claim 18 wherein the first layer and third layers are chemically dissimilar materials, the first layer including as a major constituent a fluoroplastic selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, polychlorotrifluoroethylene, ethylene tetrafluoroethylene copolymers, a graft copolymer with a fluorine-containing polymer such as copolymers of vinylidine fluoride and chlorotrifluoroethane, a copolymer of a vinyl fluoride and chlorotrifluoroethylene, the vinyl fluoride material selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, and mixtures thereof; a copolymer of vinyl fluoride material and ethylene tetrafluoroethylene; and a non-fluorinated elastomer, and mixtures thereof.

29. The tubing of claim 28 wherein the second layer includes as a major constituent an extrudable, melt-processible thermoplastic selected from the

group consisting of polyvinylidine fluoride, polyvinyl fluoride, blends of polyvinyl acetate and urethane, and mixtures thereof.

30. The tubing of claim 28 wherein the second layer includes as a major constituent a polyvinyl fluoride compound selected from the group consisting of polyvinylidine fluoride polymers, polyvinyl fluoride polymers, and mixtures thereof; a vinylidine fluoride-chlorotrifluoroethylene copolymer; and a polyamide material selected from the group consisting of 12 carbon block polyamides, 11 carbon block polyamides, 6 carbon block polyamides, and mixtures thereof.

31. The tubing of claim 28 wherein said third layer includes as a major constituent an extrudable, melt-processible thermoplastic selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, thermoplastic elastomers, and mixtures thereof.

32. The tubing of claim 18 wherein the first layer further comprises:

a first sub-layer of an extrudable, melt-processible thermoplastic containing as a major constituent a fluoroplastic selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, a graft copolymer with a fluorine-containing polymer, and mixtures thereof; and

a second sub-layer of an extrudable, melt-processible thermoplastic containing as a major constituent a fluoroplastic selected from the group consisting of a copolymer of a vinyl fluoride and chlorotrifluoroethylene, the vinyl fluoride material selected from the group consisting of polyvinylidine fluoride, polyvinyl fluoride, and mixtures thereof; a copolymer of vinyl fluoride material and ethylene tetrafluoroethylene; and a non-fluorinated elastomer, and mixtures thereof.

33. The tubing of claim 32 wherein the second layer includes as a major constituent a polyvinyl fluoride compound selected from the group consisting

of polyvinylidine fluoride polymers, polyvinyl fluoride polymers, and mixtures thereof; a vinylidine fluoride-chlorotrifluoroethylene copolymer; and a polyamide material selected from the group consisting of 12 carbon block polyamides, 11 carbon block polyamides, 6 carbon block polyamides, and mixtures thereof.

34. The tubing of claim 18 further comprising: a fourth layer defining a jacket overlying the third layer, the jacket composed of a material consisting essentially of a thermoplastic rubber selected from the group consisting of Nylon 11, Nylon 12, zinc chloride resistant Nylon 6, polyether block amides, thermoplastic elastomers, and mixtures thereof.